

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

Construction/Title V Operation No. V-99-017

LAFARGE CORPORATION

SILVER GROVE, KY.

May 26, 2000

THOMAS ADAMS, REVIEWER

Plant I.D. # 079-0520-0090

Application Log # G040

SOURCE DESCRIPTION:

Lafarge is applying to construct a new facility to manufacture gypsum wall board. Wet Gypsum produced in Flue Gas Desulfurizers at coal-fired power plants is first dried in a dryer and then sent to a calciner. The resulting stucco is then mixed with various additives and foaming agents to form a paste. This paste is sandwiched between paper coating and the mixture is "dried" to remove excess water and to recrystallize into gypsum. The boards are then trimmed, marked and stacked.

COMMENTS:

Applicable Regulations: The source is major for Title V (PM/PM10 and CO) and a minor for 401 KAR 51:017 (PSD) purposes. This permit is being issued as a combined Construction/Title V permit.

The source is subject to:

1. 40 CFR 60 Subpart OOO as adopted by Regulation 401 KAR 59:310. New nonmetallic mineral processing plants
2. 40 CFR 60 Subpart UUU as adopted by Regulation 401 KAR 60:730 Standards of performance for calciners and dryers in mineral industries
3. Regulation 401 KAR 59:010 New process operations

The Cage Mill Dryers are not subject to 40 CFR 60 Subpart UUU as they are combination dryers/crushers and 40 CFR 730(b) exempts grinding equipment that also does drying. The Cage Mill dryers are not primarily used for size reduction, but the division has made the determination that the equipment can and does function as such. This is consistent with US EPA determination Control Number: NR16 where a partial usage was determined to be consistent with an exemption.

Since this equipment will be regulated under OOO, this is less an exemption than a demarcation between overlapping regulations. Both regulations have comparable requirements for emission controls.

The Imp Mill (Flash) Calciners are calciners that also perform size reduction and are not exempted under Subpart UUU from Subpart OOO. Upon review of the background material for 40 CFR 60 Subpart UUU where similar calciners were incorporated into the standard, the division has determined that it is consistent with the regulations for the UUU emission standard to apply to the calciner.

Emission factors: Emission factors for PM/PM₁₀ are based on experience and source testing from other gypsum board plants or from AP-42 for gypsum and similar operations. For products of combustion carbon monoxide and nitrogen oxides emission factors are based on design specification, VOC and SO₂ are based on AP-42.

Compliance periods: Opacity demonstration of compliance from storage bins in 40 CFR 60 Subpart OOO is based on 10 6-minute tests. Therefore, the compliance averaging period is one hour for opacity for a OOO storage bins facility. Stack emission from Subpart OOO and Subpart UUU facilities have a compliance averaging period of six minutes.

EMISSION AND OPERATING CAPS DESCRIPTION:

The division has determined that the source does not have the potential to exceed the PSD major source thresholds. Emission levels are calculated based on equipment specifications contained in the application and proper operation of equipment. The following are the basis for this determination:

	Capacity	CO	NO _x
Cage Mill Dryer	50 MMBTU/hr	168 lbs/mmscf	50 lbs/mmscf
Imp Mill Calciners	90 MMBTU/hr	168 lbs/mmscf	50 lbs/mmscf
Four Burner Board Dryer	185.8 MMBTU/hr	168 lbs/mmscf	74 lbs/mmscf 0.074 lb/MMBTU

Final design work has not been complete on these devices, but the levels in the application are consistent with current state-of-the-art technology. To confirm minor PSD source status, the permit requires a final design submittal prior to construction of the combustion devices. The division is also requiring annual testing and that records of routine and nonroutine maintenance be kept on the burners.

PERIODIC MONITORING:

Controls are exclusively for PM/PM₁₀. They consist of small fabric filters for additive bin vents and large baghouses on other process units. Monitoring of the smaller units is to consist of a weekly check and log of pressure drops. The Calciners are exempted from COMs, but the regulation contained no guidance for periodic monitoring. Therefore, a monitoring of the fabric filter was chosen. Performance tests will be required on all large PM/PM₁₀ sources along with annual CO and NO_x testing for the combustion sources.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.